

Serial No. 09/973,767

IN THE CLAIMS:

All pending claims are set forth below. Cancelled and withdrawn claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (previously amended), (cancelled), (withdrawn), (new), (previously added), (reinstated - formerly claim #), (previously reinstated), (re-presented - formerly dependent claim #), or (previously re-presented). Please AMEND claims 1 and 2, and ADD new claim 39 in accordance with the following:

1. (CURRENTLY AMENDED) A differential signal output apparatus comprising:

a first differential pair for receiving differential signals, said first differential pair having first transistors;

a first current source, connected to one end of the first differential pair at a first branching node branching current from the first current source to the first transistors; for supplying a current to the differential pair; and

a second differential pair receiving the differential signals, said second differential pair having second transistors;

a second current source connected to one end of the second differential pair at a second branching node branching current from the second current source to the second transistors; and

a capacitor connected between a the first branching node and the second branching node so that the capacitor, the first current source, and the second current source are connected in series for branching from the current source to transistors and a low impedance node.

2. (CURRENTLY AMENDED) The differential signal output apparatus, as claimed in Claim 1, wherein:

the capacitor, the first current source, and the second current source are connected between the a first low impedance node and a second low impedance node is a power supply voltage or a ground voltage.

Claims 3 - 5 (CANCELED)

Serial No. 09/973,767

6. (PREVIOUSLY AMENDED) The differential signal output apparatus, as claimed in Claim 1, wherein:

the capacitor forms a current path allowing the current supplied from one of the first and second current sources to flow when the current to one of the first and second differential pair is cut off.

7. (CANCELED)

8. (PREVIOUSLY AMENDED) A differential signal output apparatus comprising:
a first differential pair receiving differential signals, said first differential pair having first transistors;

a first current source, connected to one end of the first differential pair at a first branching node branching current from the first current source to the first transistors;

a second differential pair receiving the differential signals, said second differential pair having second transistors;

a second current source connected to one end of the second differential pair at a second branching node branching current from the second current source to the second transistors; and

a transitional response circuit forming a current path allowing one of the current supplied from one of the first and second current sources to flow when the current to one of the first and second differential pair is cut off.

9. (ORIGINAL) The differential signal output apparatus, as claimed in Claim 8, wherein:
the transitional response circuit is a capacitor.

10. (ORIGINAL) The differential signal output apparatus, as claimed in Claim 6,
wherein:

the impedance of the capacitor is smaller than the load impedance in the differential signal output apparatus at a transitional response frequency at which a transitional current flows to the capacitor.

11. (CANCELED)

12. (ORIGINAL) The differential signal output apparatus, as claimed in Claim 9,

Serial No. 09/973,767

wherein:

the impedance of the capacitor is smaller than the load impedance in the differential signal output apparatus at a transitional response frequency at which a transitional current flows to the capacitor.

13. (PREVIOUSLY AMENDED) A semiconductor integrated circuit apparatus provided with a differential output circuit comprising:

a first differential pair constituted by arranging wiring between differential input signals and differential output signals arranging first transistors symmetrically;

a first current source connected to one end of the first differential pair so arranged that first connection wiring lines to the first transistors be symmetrical; and

a second differential pair constituted by arranging wiring between the differential input signals and the differential output signals arranging second transistors symmetrically;

a second current source connected to one end of the second differential pair so arranged that second connection wiring lines to the second transistors be symmetrical; and

a capacitor connected between a first branching node and a second branching node for the first and second connection wiring lines from the first current source and the second current source to the first and second transistors arranged in an area between the first and second transistors.

14. (PREVIOUSLY AMENDED) A semiconductor integrated circuit apparatus provided with a differential output circuit comprising:

a first differential pair constituted by arranging wiring between differential input signals and differential output signals arranging first transistors symmetrically;

a first current source connected to one end of the first differential pair so arranged that first connection wiring lines to the first transistors be symmetrical;

a second differential pair constituted by arranging wiring between the differential input signals and the differential output signals arranging second transistors symmetrically;

a second current source connected to one end of the second differential pair so arranged that second connection wiring lines to the second transistors be symmetrically; and

a capacitor connected between a first branching node and a second branching node for the first and second connection wiring from the first current source and the second current source to the first and second transistors arranged in an area between the first and second

Serial No. 09/973,767

transistors,

wherein a current supply ability of the second current source is same as or greater than a current supply ability of the first current source.

15. (ORIGINAL) A semiconductor integrated circuit apparatus provided with a differential output circuit comprising:

a first differential pair constituted by arranging wiring between differential input signals and between differential output signals and arranging transistors of a first conductivity type symmetrically;

a first current source connected to one end of the first differential pair and so arranged that connection wiring lines to the transistors of the first conductivity type be symmetrical;

a second differential pair arranged opposite to the first differential pair, constituted by arranging wiring between differential input signals and between differential output signals and arranging transistors of a second conductivity type symmetrically;

a second current source connected to one end of the second differential pair and so arranged that connection wiring lines to the transistors of the second conductivity type be symmetrical; and

a capacitor connected between a first branching node for branching connection wiring from the first current source to the transistors of the first conductivity type and a second branching node for branching connection wiring from the second current source to the transistors of the second conductivity type and arranged in an area surrounded by the first differential pair and the second differential pair.

16. (PREVIOUSLY AMENDED) A differential signal transmission system provided with a differential output circuit, the differential output circuit comprising:

a first differential input unit into which differential signals are entered;

a first current supply unit supplying a current to the first differential input unit;

a second differential input unit into which the differential signals are entered;

a second current supply unit supplying a current to the second differential input unit; and

a capacitor connected between a first connection node between the first differential input unit and the first current supply unit and a second connection node between the second differential input unit and the second current supply unit so that the capacitor, the first current supply unit, and the second current supply unit are connected in series.

Serial No. 09/973,767

17. (PREVIOUSLY AMENDED) A differential signal transmission system provided with a differential output circuit, the differential output circuit comprising:

Cont
C1

- a first differential input unit into which differential signals are entered;
- a first current supply unit supplying a current to the first differential input unit;
- a second differential input unit into which the differential signals are entered;
- a second current supply unit supplying a current to the second differential input unit; and
- a capacitor connected between a first connection node and a second connection node, the first and second connection nodes respectively connecting the first current supply unit to the first differential input unit and the second current supply unit to the second differential input unit, wherein a current supply ability of the second current supply unit is same as or greater than a current supply ability of the first current supply unit.

18. (PREVIOUSLY AMENDED) A differential signal transmission system provided with a differential

output circuit, the differential signal transmission system comprising:

- a first differential input unit configured in a first conductivity type entering differential signals;
- a first current supply unit supplying a current to the first differential input unit;
- a second differential input unit configured in a second conductivity type, of which differential output terminals are connected to differential output terminals of the first differential input unit to receive the differential signals;
- a second current supply unit supplying a current to the second differential input unit; and
- a capacitor connected between a connection node between the first differential input unit and the first current supply unit, and another connection node between the second differential input unit and the second current supply unit.

Claims 19 - 38 (CANCELED)

39. (NEW) A differential signal output apparatus comprising:

- a first differential pair to receive differential signals;
- a first current source connected to the first differential pair at a first branching node;
- a second differential pair to receive the differential signals;

Serial No. 09/973,767

Cont
C1
a second current source connected to the second differential pair at a second branching node; and

a capacitor connected between the first branching node and the second branching node to connect the capacitor, the first current source, and the second current source in series.
